

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.: 10/621,669

Conf. No.: 2080

Inventor: Jean-Claude Dispensa et al

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TC/AU: 2456

Examiner: Richard G. Keehn

Title: METHOD AND SYSTEM FOR SPLITTING AND SHARING
ROUTING INFORMATION AMONG SEVERAL ROUTERS
ACTING AS A SINGLE BORDER ROUTER

Docket No.: FR920020044US1(IEN-10-6561)

Customer No.: 26681

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

REPLY BRIEF

Dear Sir:

In response to the Examiner's Answer mailed June 1, 2009, please reconsider the above-identified application in view of the following comments:

Response to Argument begins on page 2 of this paper.

Grounds of Rejection

Whether independent claim 1 and dependent claims 2-3, 6-7 and 9 under 35 USC §103(a) are unpatentable over Martin (US Pat. No. 6,744,739 B2), further in view of Huitema et al. (US Pat. No. 7,065,587 B2) and Miller (US Pat. No. 6,915,457 B2).

Whether dependent claim 5 under 35 USC §103(a) is unpatentable over Martin (US Pat. No. 6,744,739 B2), further in view of Huitema et al. (US Pat. No. 7,065,587 B2), further in view of Miller (US Pat. No. 6,915,457 B2), and further in view of Choe (US App. No. US 2002/0118682 A1).

Response to Arguments

Claims 1-3, 6, 7 and 9

The Examiner's Answer asserts that Appellants' arguments with respect to claims 1-3, 6, 7 and 9 should not be found persuasive because the combination of the claims are unpatentable under 35 U.S.C. 103(a) over Martin, in view of Huitema et al. and in further view of Miller. This assertion is respectfully traversed as the combination of Martin, Huitema et al. and Miller does not establish a *prima facie* case of obviousness with respect to the subject claims.

The rationale to support a conclusion that the claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed. *KSR International Co. v. Teleflex Inc.*, 550 U.S. ____ (2007). MPEP §2143.

Independent **claim 1** recites a method **for splitting and sharing routing information between a group of routers**, comprising, *inter alia*:

- (i) **providing a group of routers;**
- (ii) **each of the routers acting as a single border router** in an Internet protocol network, each router comprising a routing table;
- (iii) **comparing the size of the routing tables with a predefined threshold; and**

(iv) in response to the size of a routing table of a first of the group of routers exceeding the predefined threshold:

(a) *splitting the first router's routing table into a plurality of subnetworks;*

(b) *a second of the routers taking responsibility for routing IP traffic intended for a one of the plurality of subnetworks by informing each of the other routers that it is ready to receive the IP traffic from the each of the other routers directed to the one subnetwork;*

(v) in response to the informing, *each of the other routers selecting and removing from their own routing table* a route related to the one subnetwork and *replacing the removed route by a single route* pointing to the informing second router.

The combination of Martin, Huitema et al. and Miller fails to teach or suggest the above-emphasized claim elements.

In particular, the Office asserts the claim language reads “EACH of the routers ACTING AS A SINGLE BORDER ROUTER.” (*emphasis added by the Office*). The Office clarifies saying the claim language on its face indicates that each router is a single border router. This assertion is respectfully traversed because all words within a claim must be considered in determining patentability.

“All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970). MPEP §2143.03.

When all words of the claim are considered, claim 1 discloses a method for *splitting and sharing* routing information *between a group of routers*, where *a group of routers* is provided, and each of the routers *acts as a single border router*. Martin is silent regarding a method for splitting and sharing routing information, for providing a group of routers, and for each of the routers acting as a single border router. Each of the

routers described in Martin acts on its own as an area border router or system border router, containing all routing information for its particular area (see column 7, lines 46-54). *No group of routers is disclosed wherein each in the group acts as a single router.*

Moreover, the examiner's Answer Brief discusses appellants' claim 1 and remarks in support thereof with regard to a term not entered by amendment into claim 1: "together." Appellants have not requested the addition of this term through any formal amendment request, and thus any issues raised by the term "together" are moot and not properly brought before the Board by the Examiner.

The Office additionally asserts that Appellants' argument relating to claim elements (a) and (b) are not persuasive, in particular, that Martin does disclose (a) splitting a routing table into a plurality of subnetworks, and (b) a second router informing each of the other routers that it is ready to receive the IP traffic from each of the other routers directed to the subnetwork. This assertion is respectfully traversed.

A routing table, as is commonly known in the art, is an electronic table (e.g. database type) in which routes to particular network destinations are stored. Martin fails to disclose splitting a routing table as Martin instead discloses the concept of route summarization, where a network is divided into logical areas with each area's border router advertising only a single summary route (see column 7, lines 46-54). Martin does not disclose dividing a routing table into a plurality of subnetworks.

In addition, Martin fails to disclose a second router informing each of the other routers it is ready to receive IP traffic from each of the outer routers directed to the subnetwork. Martin instead discloses "an area border router can be configured to announce those networks coming in as though they were a single, much larger network" (see column 7, lines 46-54). To wit, the independent border routers do not inform (or announce to) other routers that they are ready to receive traffic, but instead summarize all the incoming networks as a single network when communicating with other area border routers. Thus, as established above, Martin fails to disclose the limitations specifically claimed by claim 1. Moreover, contrary to the examiner's assertions, appellants have not admitted that Martin discloses any of the limitations at issue. The *prima facie* burden is

upon the examiner to show how each of the limitations at issue are disclosed to one skilled in the art by prior art cited, in this case Martin, and the examiner may not meet this burden by instead merely misconstruing appellants' own remarks.

The Office asserts that Appellants' arguments that Huitema et al. is silent regarding comparing the size of the routing table to a predetermined threshold whereby an action...is taken if the threshold is exceeded" are not persuasive. The Office particularly asserts the phrase "when the maximum limit is reached" indicates "comparing the size of the routing table to a predetermined threshold." The Office further asserts that the phrase "nodes have to select the entries they intend to keep or drop" indicates "an action is taken if the threshold is exceeded." These assertions are respectfully traversed.

Huitema et al. discloses that there are practical (physical) limits to its routing table. When the maximum limit is reached, nodes have to select the entries they intend to keep or drop (i.e., a new input will replace the least recently used input) (see column 3, lines 10-15). Huitema et al. fails to disclose a maximum threshold as Huitema et al. instead describes only a practical available space limit for a routing table, with only so much information being able to be contained within the table. Comparing the size of the routing table to a predetermined threshold whereby splitting the routing table into a plurality of subnetworks and a second of the routers taking responsibility for routing IP traffic from one subnetwork by informing each of the other routers that it is ready to receive the IP traffic from the each of the other routers directed to the one subnetwork is not disclosed in Huitema et al. Only when the available space within the table is used up in Huitema et al. will unused input be replaced. Hence, Huitema et al. fails to teach or suggest the claimed elements of claim 1.

Lastly, the Office asserts that Appellants' arguments relating to claim element (v) are not persuasive, in particular that Miller teaches in response to the informing, each of the other routers selecting and removing from their own routing table a route related to the one subnetwork and replacing the removed route by a single route pointing to the informing second router. The Office particularly asserts that Miller teaches that a router

A takes responsibility for a router B's failure and advertises to a router C the change router C needs to make to account for router A's taking over that which router B once handled. These assertions are respectfully traversed.

Miller et al. at Figure 5 discloses a router A having a routing manager and a routing plane index (see column 7, lines 56-59). Figure 5 further includes two additional routers, B and C, which communicate with A by RIP (router B) and BGP (router C) (see column 7, line, 64 to column 8, line 4). If pathways exiting from router B fail, for instance a second RIP pathway and a BGP pathway, *router B updates its own table and notifies router A to update the routing plane index*. Router C, in this example, only requires RIP pathway information, *gets an update from the routing plane index* which includes information of only the RIP failure (see column 8, lines 5-21). The routers exemplified in Martin do not take responsibility of routing traffic for another router. Instead, where a particular router fails, the tables of all other routers communicating with that router are updated so as to reflect the failure to help pinpoint the application error occurring in router B. As such, Martin fails to teach or suggest the specified aspects of claim 1.

Thus, the Office has failed to make a *prima facie* case of obviousness with respect to each of the limitations specifically claimed by claim 1 in view of the combination of Martin, Huitema et al. and Miller, and claim 1 is believed allowable over the combination of Martin, Huitema et al. and Miller under 35 USC § 103(a).

Claims 2-3, 6-7 and 9 are all directly dependent upon claim 1, and thus incorporate all of their respective limitations and are all, therefore, also believed to be allowable over Martin under 35 USC §103(a).

Claim 5

The Examiner's Answer asserts that Appellants' arguments with respect to claim 5 should not be found persuasive because the claim is unpatentable under 35 U.S.C. 103(a) over Martin, in view of Huitema et al., in further view of Miller and further in view of Choe. This assertion is respectfully traversed as the combination of Martin,

Huitema et al., Miller and Choe does not establish a *prima facie* case of obviousness with respect to the subject claims.

Dependent **claim 5** recites selecting routes in the routing table comprising the further step of ***selecting contiguous IP addresses within a given address range***. The Office asserts that Appellants' arguments that Choe does not disclose these elements are not persuasive. This assertion is respectfully traversed.

Choe discloses storing routing entries according to *preset prefix length*, using a skip list method to connect sparse subsequences of the prefixes, as is commonly known in the art (e.g., for ease in looking up routing entries with limited connections, see paragraph [0023]). The lookup method includes starting with a first node of the skip list and comparing a route with hash tables at a subsequent node (see paragraph [0023]). As such, Choe is silent regarding selecting contiguous IP addresses. Thus, claim 5 is allowable over Martin, Huitema et al., Miller and in view of Choe under 35 USC §103(a).

Conclusion

In view of the foregoing, it is submitted that the pending claims distinguish patentably and non-obviously over the prior art of record. Reversal of the outstanding rejections is respectfully requested.

Respectfully submitted,



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